UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 7
11201 Renner Boulevard
Lenexa, Kansas 66219

JUN 0 5 2015

MEMORANDUM

SUBJECT: Soil Sampling Results from Independent Petrochemical Corporation Site

FROM: Greg McCabe
ENST/EDAB

TO: Michael B. Davis
SUPR/ERSB

We have completed our review of the soil sampling data, as well as the Integrated Site Assessment for a Site Reassessment and Removal Site Evaluation report, dated February 26, 2015, for the Independent Petrochemical Corporation site. As part of our review, we developed risk estimates for three different soil exposure scenarios: construction worker, composite worker, and outdoor worker. We also considered the utility worker scenario. However, using the U.S. Environmental Protection Agency's default exposure values, the construction worker scenario is actually more conservative than a utility worker scenario, so that is the exposure scenario we selected to represent a worker involved in excavation activities at the site. For each scenario, we used the default exposure assumptions used in various EPA risk assessment guidance documents. We also based our risk estimates on the maximum soil contaminant concentration for the contaminants shown in the following table:

Contaminant	Maximum Soil Concentration, mg/kg
Benz(a)anthracene	7.9
Benzo(a)pyrene	9.6
Benzo(b)fluoranthene	14.0
Benzo(k)fluoranthene	10.0
Dibenz(a,h)anthracene	3.9
Indeno(1,2,3-cd)pyrene	9.4
Naphthalene	40.0
Pentachlorophenol	8.0
1,1,2,2-trichloroethane	6.1

Following are the exposure scenarios and potential excess cancer risk estimates we developed for each scenario. Because the carcinogenic screening values are much lower, and thus more protective than the noncarcinogenic screening values, no risk estimates for noncancer health effects were developed.

Scenario	Risk Estimate
Construction worker	1.12E-05
Composite worker	5.99E-05
Outdoor worker	5.39E-05

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1.0

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As you can see, based upon the information gathered to date, the potential excess cancer risk presented by each of the three exposure scenarios evaluated falls within the EPA's acceptable risk range of 1E-06 to 1E-04.

It is important to emphasize here that the risks presented above are for various commercial/industrial uses only. These risk estimates are not applicable to a residential scenario. We did, however, evaluate a residential scenario. Again using the highest contaminant concentration in the soil, as well as the EPA default exposure values for a residential scenario, we estimated the potential excess cancer risk that could be posed by soil contamination at the site. That potential excess cancer risk is 1.02E-03, which is well outside of the EPA's acceptable risk range. Thus, we would recommend that the site not be utilized for purposes other than commercial/industrial (e.g., residential, schools, daycares, etc.) unless soil contamination is remediated to levels which would support residential use.

We would reiterate here that the presence of high sub-slab vapor concentrations below the buildings on site, especially the structure formerly housing the bar, along with lesser concentrations of those same contaminants in indoor air, indicates that a complete vapor intrusion pathway does exist at the site. In our memo dated January 21, 2015, as well as our email dated February 10, 2015, we noted that subslab vapor concentrations of several volatile organic compounds were very high, especially those found during the August 2014 sampling event. Assuming an attenuation factor of 0.03, the subslab vapor concentrations found in August 2014 could yield indoor air concentrations of contaminants which would exceed the EPA Region 7 action level of 1E-05. Because the building which formerly housed the bar is currently unoccupied, we did not recommend in our January 21, 2015 memo the immediate installation of a vapor intrusion mitigation system. However, based on the very high concentrations of contaminants found in the subslab vapor during the August 2014 sampling event, we would recommend the installation of vapor intrusion mitigation system prior to occupancy. As noted in our January 21, 2015 memo, we also recommend that subslab vapor and indoor air sampling at the site continue to be done each quarter for a total of four quarters.

Please contact me at x7709 if you have any questions regarding our review.